

1.3 TAG

Explore

Name _____

Hour _____ Date _____

1.3 How Straight is Your Coaster Car Traveling?

Read p. 31.

What will you need to do for today's challenge?



Reflect

Answer the following questions with your group:

1. What information do you need to predict how far from the centerline your coaster car will cross a finish line? Remember that you do not know where the finish line will be.
2. How can you modify the performance-test procedure you developed to help you make your prediction?
3. How can you organize your data to help you make a prediction?
4. Why would performing repeated trials make you confident about your prediction?

STOP FOR CLASS DISCUSSION!

Design Your Procedure

Read this paragraph on p. 32. Then, plan your procedure and set-up with your group. Record your ideas on the "Finish-line Procedure and Results" page.

Conduct the Performance Test

Read the bottom of p. 32, and carry out your procedures. Record your results on the "Finish-line Procedure and Results" page.

Predict

Read this paragraph on the top of p. 33 and write your prediction on the "Finish-line Procedure and Results" page. Mark your prediction on the actual finish line.

Test Your Prediction

Watch while other groups test their car. When it's your turn, conduct three trials.

Analyze Your Data

Calculate the difference between each of your trials and your prediction.

Best trial difference:

Average difference:

How did your prediction compare to your car's performance?

Why do you think your prediction was so close or so far from your coaster car's performance?

Be prepared to share this information with the class. Also be ready to report your procedure you used to collect data for your prediction.



Communicate

Listen to each group as they report the difference between their predictions and their cars' performance. Record each group's average difference below.

Group	Difference	Notes on Procedures/Tables/Graphs
1		
2		
3		
4		
5		
6		
7		



Reflect

Answer the following questions with your group:

1. Which groups made the most accurate predictions? Why? How did their procedures and tables or graphs allow them to make their predictions?
2. Which groups' predictions were not as accurate? Why? What might have been wrong with their procedures or graphs?
3. How accurate were your predictions? How could you have made them more accurate?
4. Earlier, you considered how far your coaster car traveled. Then you considered how straight your car traveled. What factors might be causing your car to slow down or change direction?
5. What do you think you can do, based on these trials, to make your coaster car perform better?



What's the point?

Read this paragraph on p. 34

Your challenge for this learning set is to: **Design and build a coaster car that travels straight and far.** How does keeping accurate records help you meet this challenge?